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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,103	12/14/2001	Karl James Molnar	P14953-US1	6484
24239	7590	02/08/2006		
MOORE & VAN ALLEN PLLC P.O. BOX 13706 Research Triangle Park, NC 27709			EXAMINER BOCURE, TESFALDET	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,103	MOLNAR, KARL JAMES	
	Examiner	Art Unit	
	Tesfaldet Bocure	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,7-15,19-29,31-33 and 35-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,7-15,19-29,31-33 and 35-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3,9,10,11,13-15,23-26,27-32,38 and 39 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed does not support to the newly claimed limitation “---the first and second user and on a pulse shape component applied to symbols from the prior iteration,” in claims 1,9,10,11,13,23-26 and 27.

It should be noted that, as claimed, it reads as if the pulse shaping is performed on the symbols from the prior iteration rather than the disclosed “The interfering terms are components from prior iteration and the pulse shape component,” in page 20, line 10 of the specification. There is no mention that the *pulse shaping process is applied to the prior iteration* as now claimed.

3. Claims 2-3,14-15,28-32,36,38 and 39 are inherently rejected as being dependent on the rejected base claims.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-8,12,19-23,35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dabak** (ER 1-133-071, of a record) in view of **Hafeez et al.**, (US patent number 6,304,618, newly cited).

Dabak teaches a RAKE receiver (fig.7) for receiving and jointly estimating the channel and detecting (712 and 714) the plurality data symbols (see input to finger 700-704) corresponding to a plurality of users comprising: joint channel estimating of the plurality of the received symbols (804-818 in fig. 8) and iteratively detecting (824) the received current symbols using the previously estimated channel and previously detected symbols (see starting pager 6, line 8 through page 8, line 6 and fig. 8) as in claims 7,12 and 27.

Further to claims 7,12 and 19 also teaches that a preamble, claimed pilot is used for both joint estimation and detection of the user's data.

Further to claims 21 and 22, **Dabak** also teaches that a midamble symbols in the received CDMA in fig.4 a, claimed pilot in CDMA for further use by the receiver for tracking the channel as in claims 21 and 22;

The estimated channel response is used for the next symbols (page 6, lines 20-25) as in claim 8.

The data detecting unit in figure 6b has elements 628 and 630, the claimed broad reformation in claims 20 and conjugate multipliers (640,646,644,654 and adders 660 and 666) as in claim 20.

The received data from the plurality of users (see figure 5B) are processed in the order they come by the receiver in figure 7, therefore, reads on the broadly claimed “--- estimating the plurality of symbols out of natural order” in claims 35 and 37.

Dabak fails to teach that: the first and second users are asynchronous as in claims 7,12 and 19.

Hafeez et al., (**Hafeez** hereinafter) for the same endeavor as the instant application and that of **Dabak** teaches a joint estimation and detection method, where the users' information is jointly estimated and detected (602 and 604) using a pulse shaping information generated by the pulse shape information generator 306¹; and semi- blind acquisition may be used when the information of one of the user is known.

Therefore it would have been obvious to use the pulse shaping information and semi-blind equalization method of Hafeez to minimize the processing time and detect multi user information at the time the invention was made.

¹ It should be noted that the asynchronous is defined in the specification page 5, lines 11-13 as “if the signals from the first and the second users are asynchronous, detection can be accomplished through reference to a pulse shaping components,” as is the case in the Hafeez's patent.

Response to Amendment

3. Applicant indicated in his remarks, see page 12, line 11 of the argument, that the pending claims are 1-3, 7-15, 19-29,31-33,35-40, however there is no claim 40 in the amendment received on 11/14/05.

4. In response to Applicant's argument regarding claims 1-3, 7-15, 19-29,31-33,35-39 that:

The Examiner has rejected all of Applicant's claims under 35 U.S.C. 103(a) in view of European Patent Application 1-133-071 A2 to Dabak ("Dabak") in combination with U.S. Patent 6,304,618 to Hafeez et al. ("Hafeez"). For a rejection under section 103 to stand, each and every element must be taught or suggested by the references as combined. M.P.E.P 2143.03. The Examiner admits that Dabak does not teach a method that can be applied to asynchronous users, but points to Hafeez for such teachings. Applicant, while not necessarily agreeing with the Examiner, notes that even assuming that the Examiner is correct regarding this aspect of Dabak and Hafeez, some embodiments of Applicant's disclosure make use of known training or pilot symbols from both first and second users for detection and channel estimation, thus obviating the need for semi-blind initialization. Additionally, the use of pilot symbols from both users is not possible in environments where one "user" is an interference signal from outside the system, but pilot symbols from both users are often available in environments where co-channel interference is a prime concern, as described in Applicant's disclosure beginning at page 3, line 19.

No where in the claims, specifically the independent claims is calling that the pilot symbols from both users are often available in environment where there is a co-channel interference as alleged by the applicant, rather the use of preambles, claimed pilots, in the system of Dabak are used for joint estimation of the channel and detection of the users data as claimed in the instant application.

Further response to the argument that:

In the present instance, Hafeez uses semi-blind initialization rather than pilot symbols

from both users. Moreover, Dabak teaches away from handling asynchronous users. Thus, a motivation to combine these references to achieve Applicant's claimed invention cannot exist. For all of the above reasons, Applicant submits that claims 1, 7, 11-13, 19, and 27 as amended are not obvious in view of Dabak in combination with Hafeez.

Examiner position to use the Hafeez reference was to meet the claimed limitation, asynchronous in the independent claims.

As the motivation to combine:

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both of the references uses a joint detection and estimation method for estimating the channel and detect the data received from a plurality of users and adaptively perform the joint detection depending the channel conditions.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patent numbers 5,506,861 issued Bottomley discloses joint channel estimation and data detection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tesfaldet Bocure whose telephone number is (571) 272-3015. The examiner can normally be reached on Mon-Thur (7:30a-5:00p) & Mon.-Fri (7:30a-5:00p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T.Bocure

Tesfaldet Bocure
Primary Examiner
Art Unit 2631

A large, stylized handwritten signature in black ink, overlapping the printed name and title of the examiner.